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# THE UNITED STATES OF AMERICA

**TO ALL TO WHOM THESE PRESENTS SHALL COME:**

**UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office**

May 21, 2004

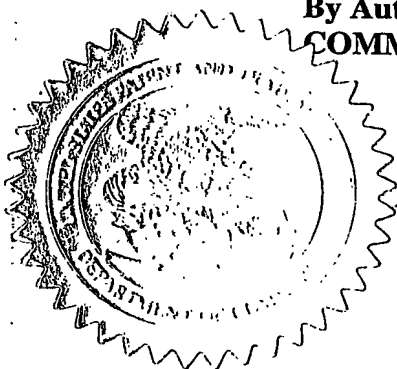
**THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE.**

**APPLICATION NUMBER: 60/495,654**

**FILING DATE: August 15, 2003**

**RELATED PCT APPLICATION NUMBER: PCT/US04/06562**

**By Authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS**



**N. WOODSON  
Certifying Officer**

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PTO/SB/16 (02-01)  
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# **PROVISIONAL APPLICATION FOR PATENT COVER SHEET**

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

Express Mail Label No. EL 995079263 US

## **INVENTOR(S)**

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Carl	Christensen	South Jordan, Utah USA

☐ Additional inventors are being named on the next separately numbered sheets attached hereto

## **TITLE OF THE INVENTION (280 characters max)**

**BROADCAST ROUTER WITH MULTIPLE EXPANSION CAPABILITIES**

## **CORRESPONDENCE ADDRESS**

Direct all correspondence to:

☐ Customer Number

OR

Type Customer Number here

Place Customer Number  
Bar Code Label here

<input checked="" type="checkbox"/> Firm or Individual Name	JOSEPH S. TRIPOLI, THOMSON MULTIMEDIA LICENSING INC.				
Address	PATENT OPERATIONS.				
Address	P. O. BOX 5312				
City	PRINCETON	State	NJ	ZIP	08543-5312
Country	USA	Telephone	609-734-6805	Fax	609-734-6888

## **ENCLOSED APPLICATION PARTS (check all that apply)**

<input checked="" type="checkbox"/> Specification Number of Pages	1	<input type="checkbox"/> CD(s), Number	
<input type="checkbox"/> Drawing(s) Number of Sheets	1	<input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76			

## **METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)**

- ☐ Applicant claims small entity status. See 37 CFR 1.27.  
☐ A check or money order is enclosed to cover the filing fees

- ☒ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 07-0832  
☐ Payment by credit card. Form PTO-2038 is attached.

FILING FEE  
AMOUNT (\$)  
160

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

- ☒ No.  
☐ Yes, the name of the U.S. Government agency and the Government contract number are: \_\_\_\_\_

Respectfully submitted, Francis A. Davenport  
SIGNATURE

Date August 15, 2003

TYPED or PRINTED NAME FRANCIS A. DAVENPORT

REGISTRATION NO. 36,316  
(if appropriate)

TELEPHONE 609 734-6805

Docket Number: PU 030245

## **USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT**

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C., 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

17613 U.S. PTO  
60/495654

# FEE TRANSMITTAL for FY 2003

Patent fees are subject to annual revision.

Complete if Known

TOTAL AMOUNT OF PAYMENT (\$ 160

Application Number N/A  
Filing Date HEREWITH  
First Named Inventor Carl Christensen  
Examiner Name N/A  
Group / Art Unit N/A  
Attorney Docket No. PU 030245

## METHOD OF PAYMENT (check one)

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit  
Account  
Number

07-0832

Deposit  
Account  
Name

THOMSON multimedia Licensing Inc.

☒ Charge Any Additional Fee Required  
Under 37 CFR 1.16 and 1.17  
☐ Applicant claims small entity status.  
See 37 CFR 1.27

2. ☐ Payment Enclosed:

☒ Check ☐ Credit card ☐ Money  
Order ☐ Other

## FEE CALCULATION

### 1. BASIC FILING FEE

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	
105	330	205	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	160

SUBTOTAL (1)

(\$ 160

### 2. EXTRA CLAIM FEES

Total Claims	20 **	Extra Claims	0	Fee from below	0	Fee Paid	0
Independent Claims	3 **	0	0	0	0	0	0
Multiple Dependent							
Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description			
103	18	203	9	Claims in excess of 20			
102	84	202	42	Independent claims in excess of 3			
104	280	204	140	Multiple dependent claim, if not paid			
109	84	209	42	** Reissue independent claims over original patent			
110	18	210	9	** Reissue claims in excess of 20 and over original patent			

SUBTOTAL (2)

(\$ 0

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

Fee Code	Large Entity Fee (\$)	Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17 (q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ 0

## SUBMITTED BY

Complete (if applicable)

Name (Print/Type)	Francis A. Davenport	Registration No. Attorney/Agent)	36,316	Telephone	609-734-6805
Signature	Francis A. Davenport			Date	09/15/03

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

The PTO did not receive the following listed item(s) Chart & 12-1-02

## BROADCAST ROUTER WITH MULTIPLE EXPANSION CAPABILITIES

Broadcast router configurations can vary widely, for example, it can require few inputs and but many outputs, many inputs and few outputs, or approximately equal inputs and outputs. Linearly expandable routers allow users to start with a smaller router and enlarge it later by adding more chassis and connecting the chassis. Supporting a wide range of differences between number of inputs and outputs and linear expansion will result in configurations where large portions of the chassis are empty. The advantageous architecture disclosed herein allows for more optimal use of the chassis in various configurations.

A novel architecture for a broadcast router chassis allows the same chassis to be used for two different linearly expandable router systems. In the first system, the chassis supports the same number of input and output cards per chassis. A signal chassis is a viable system and the system can grow one chassis at a time. In the second system, a chassis holds either input or output cards but not both. Thus, two chassis are required to make a system. Systems containing more input chassis than output chassis are supported as are a system with more output chassis than input chassis. The second system can be used to build larger systems, from the same chassis with the same number of expansion ports.

FIGURE 1 is a block diagram representing the functional structure of the chassis. The inclusion of TDM data paths to and from each slot to the matrix/expansion slot is new and not known in prior broadcast routers. In addition to transferring data, these TDM data paths may also be used for transferring commands, status, and system health monitoring information throughout the chassis. FIGURE 3 is an example of a full configuration in system of FIGURE 1.

FIGURE 2 depicts an alternate structure which allows for redundant matrix, expansion operations and link.

FIGURE 3 is an example of a full configuration in the system of FIGURE 1.

FIGURE 4 is an example of a full configuration in the system of FIGURE 2.

FIG. 1

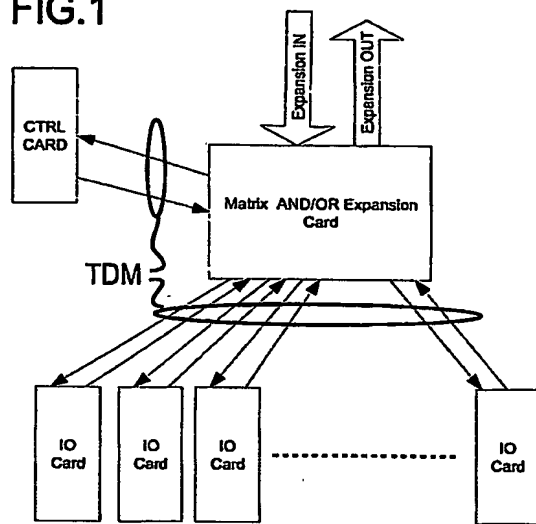


FIG. 2

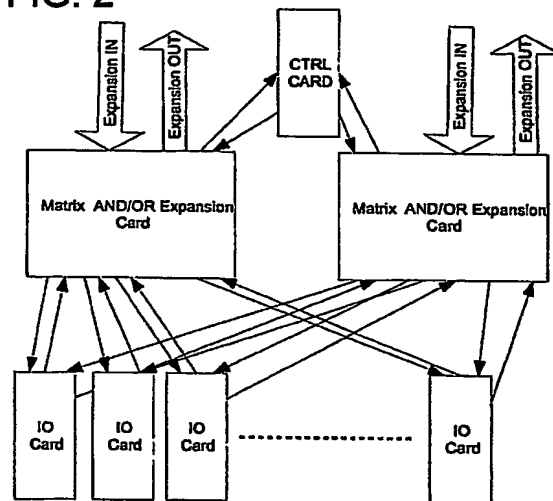


FIG. 3

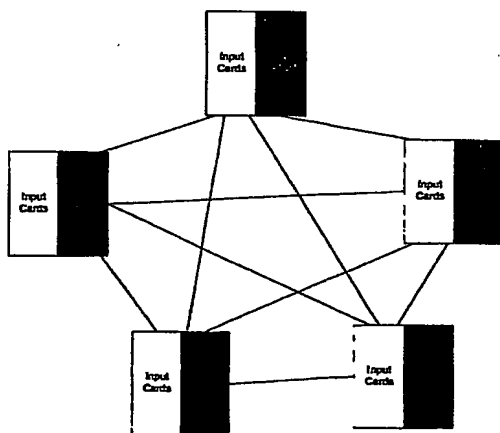
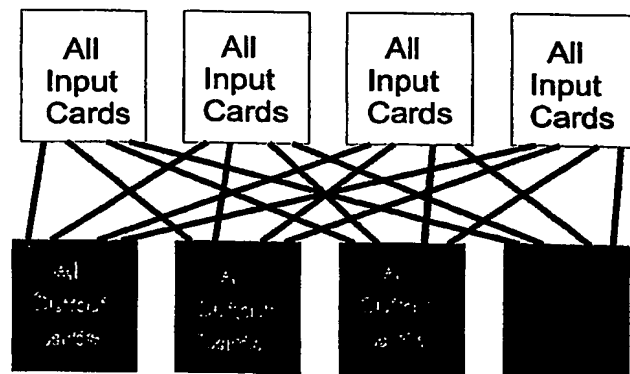


FIG. 4



PATENT APPLICATION SERIAL NO. \_\_\_\_\_

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE  
FEE RECORD SHEET

08/19/2003 SDENB081 00000025 070532 50495534  
01 FD:100E 150.00 JR

PTO-1556  
(5/87)